

REVIEW ARTICLE

Quality assurance and competitiveness of micro and small enterprises in the bakery and pastry sector

ABSTRACT

Quality assurance in food industries is a key factor, capable of redirecting micro and small enterprises (MSEs) towards obtaining food certifications with the objective of having a better future, based on the pillars of competitiveness, so that market globalization does not affect them. This article offers a literature review of quality assurance in relation to the dimensions of certification of general principles of food hygiene (PGH), certification of Hazard Analysis and Critical Control Points (HACCP), in addition to the certification of the quality management system (ISO 9001:2015) for the food sector. To determine competitiveness, the analysis is carried out in the following dimensions: productivity, technology, innovation, customer satisfaction, and public health. MSEs are the result of many years of work by entrepreneurs who, thanks to their effort and discipline, generate employment and are the future sources of employment for professionals.

Keywords: quality assurance, competitiveness, public health.

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INTRODUCTION

The quality of food products in Peru depends on whether MSEs manufacture food in compliance with Peruvian food standards. In this regard, it is important to point out that the country's regulations do not make any distinction as to the size of the company that manufactures food products, since the standards are of mandatory use in the preparation of Manuales de Buenas Prácticas de Manufactura (BPM) and Programas de Higiene y Saneamiento (PHS) in order to obtain the Principios Generales de Higiene de Alimentos (PGH) certification.

In order for users who consume a manufactured food product to avoid foodborne infections or food poisoning, manufacturers need to implement competent safety and quality control systems. Therefore, the guarantee of protecting public health when producing safe food also involves a constant improvement of the quality of food products, so that it lays the foundation for quality assurance and establishes a sanitary policy in food industry manufacturing (Ardón, 2017). Thus, food product quality assurance foundations are required to generate quality systems or models.

Hazard Analysis and Critical Control Points (HACCP) for MSEs is an important factor in implementing a system that controls production and identifies food hazards to minimize the risk of public health problems and customer complaints. Peru's main food safety standard describes the procedure for implementing the HACCP system and, in one of the statements of the food regulation compendium, requires the business organization (depending on its size) to carry out the HACCP system certification process as is required in sectors that manufacture food (Resolución Ministerial N°449-2006/MINSA, 2006). Thus, the technical decision to be certified with the HACCP system is based on a better control of the food production chain, which allows minimizing the risks of diseases that may occur upon consumption.

On a voluntary basis, MSEs can be certified in the ISO 9001:2015 technical standard as a tool for implementing a quality management system. The development of MSEs depends on the strategic business decision

to implement a quality management certification, seeking to create a competitive industrial basis to endure over time (Instituto Nacional de la Calidad [INACAL], n.d.). Thus, the use of technical standards will guarantee an improvement in results by providing products and services of better quality that yield economic and ethical returns as a result of the ISO system certification.

PURPOSE OF THIS PAPER

The purpose of this paper is to promote and raise awareness of the fact that quality assurance goes hand in hand with the competitiveness of bakery and pastry MSEs in Lima in 2021. Therefore, it is important to know whether PGH certification is related to the competitiveness of bakery and pastry MSEs in 2021. In addition, the literature is reviewed to determine if HACCP and ISO 9001:2015 certifications are related to the competitiveness of bakery and pastry MSEs in 2021.

ARGUMENTATIVE REVIEW

It is important that companies, in order to position themselves in their field, implement quality assurance, which is necessary to be competitive in the market, designing the system according to the reality in each sector. The process of joint work involving the different product development areas is not independent, so the system coordinates with the support departments and processes in order to guarantee quality and achieve customer satisfaction, which is the *raison d'être* of the business organization (Cantú, 2011). Within this perspective, quality assurance will be the cornerstone of any company's structure to implement a continuous improvement model.

Quality Assurance System

The process preceding quality assurance is the management of product safety and quality while manufacturing products that are competitive for the market. This is evidenced by the certification granted by the Dirección General de Salud e Inocuidad Alimentaria (DIGESA) and the ISO certification entities previously accredited by INACAL.

General Principles of Food Hygiene (PGH)

The Autoridad Sanitaria Internacional del Codex Alimentarius is key for the Peruvian food industry sector to understand the importance of being certified with PGH, whose main justification focuses on the fact that national companies must guarantee the safety of industrialized products by applying good manufacturing practices.

In Peru, in order to manufacture industrialized products, the minimum requirement is to have a PGH certification, which means implementing manuals describing food manufacturing procedures and food hygiene. It should also be taken into account that, even if the company processing products on the list of high-risk food is just an MSE, it is still obliged to be certified with the HACCP system according to the articles modified to the executive order on main control and surveillance of food and beverages (Decreto Supremo N°004-2014-SA, 2014). Thus, MSEs must implement manuals for food production with procedures and standards for the application of food regulations that guarantee the safety and quality of food products.

HACCP System

Resolución Ministerial N°449-2006/MINSA approved the Norma Sanitaria para la Aplicación del Sistema of the HACCP System in the Fabricación de Alimentos y Bebidas (2006) because companies in the food sector needed to trade and, to this end, it was necessary not only to ensure food safety, but also to take the next step to ensure that national products are of increasingly higher quality, since there were many complaints in the domestic market and returns from international customers. To lower the risk of a food item becoming a problem, it is important for the food industry to understand that the implementation of a HACCP system provides greater food safety and quality, while generating progressive gains in the efficiency of its processes, which increases customer confidence in the product (Pascal *et al.*, 2010). The author of this article believes that an HACCP system addresses the problem of many MSEs that do not generate satisfactory profitability due to a lack of control of their processes, which reduces the quality of their products, thereby

exposing them to manufacturing industrialized products that cause Foodborne Diseases (FBD).

ISO 9001:2015 System

In order to achieve ISO 9001:2015 certification, it is recommended that MSEs should receive honest and creative advice to find solutions, which will provide a return on the investment made to achieve certification. The modification of the ISO 9001 standard in 2015 promotes a business management in which company departments coordinate with each other in the design and planning of the document system for the business organization (López, 2015). Thus, countries that are members of global standardization hold frequent meetings to assess and improve the ISO standards principles with the aim of international trade with standardized products or services.

Competitiveness in Peru

In the government period from 2016 to 2020, the Ministerio de Economía y Finanzas (MEF) reached a management milestone by presenting a state policy on the competitiveness of Peru. Private companies, in coordination with the country's authorities, will have the opportunity to receive trainings that will allow them to be competitive depending on the implementation of competitiveness and productivity as a state policy to have an emerging nation (Decreto Supremo 237-2019-EF, 2019). This is a virtuous cycle: workers can receive higher wages due to the increased competitiveness of companies, which will in turn provide better job offers due to industrial growth.

Productivity

Effectiveness and efficiency are not the same thing. The former is the level of effect a company has produced to achieve results; the latter is the ability to find a balanced relationship between the appropriate resources for a process or step to achieve the projected results. Effectiveness is achieving the projected results with the use of the appropriate tools necessary to meet the goals set by the company; on the other hand, efficiency is having the lowest levels of non-compliant products in order to be profitable and increase productivity (Gutiérrez, 2010). In other words, it is necessary for a company to

have effectiveness and efficiency implemented in its processes or systems so that, through the use of indicators, the objectives can be achieved in relation to productivity.

Technology

In a globalized world, MSEs have a pressing need to adopt new technologies to ensure that their processes meet the consumers' quality requirements. Essentially, technologies affect companies in three critical areas: product, process, and management. Product marketing is done through planning, which consists of using administrative tools with the objective of generating technology based on techniques acquired over time from theoretical and practical experiences in the product development stages (Ahmed *et al.*, 2012). Emerging technologies help in the acquisition of knowledge; at first, in a tacit manner, supported by specialists, to make it explicit in order to support compliance with quality standards.

The food industry is constantly acquiring technologies to improve the quality of its products, while improving the design to meet the consumers' demands. Quality requires the food industry sector to acquire technology through high-end equipment that meets customer requirements in terms of innovation and, thus, competitiveness (Raventós, 2015). In this regard, there is a constant and indispensable need to acquire technology for the food industry in order to improve products with new food production and preservation methods.

Innovation

At present, the only way for a company to endure over time is by innovating its products or improving them. Thus, it is not advisable to keep the same products for long periods of time; on the contrary, it is important to support the product portfolio with products that are innovative or improved. A company that fails to innovate will face greater competition because it does not create products that are different from those of its competitors. Therefore, the best business alternative to grow in the market is innovation (Escorsa and Valls, 2003). Based on this approach, the lifetime of a product and process is increasingly limited by the market due to increased competition. It is important

for companies to have a product portfolio that endures over time thanks to products that have been well-positioned for many years.

Customer satisfaction

Customers purchase a product or service according to their quality expectations and needs, so they will select one of the many companies competing in the market. The purchase of a product comprises the technical aspects required by customers. In some cases, products are previously filtered by the salesperson, who will customize the product according to the customer's request, in addition to evaluating their budget and other aspects (Cantú, 2011). Thus, in this customer purchase decision process, there will first be a projection of a product that meets the minimum specifications or requirements to satisfy the customer's needs before purchasing it.

Public health

Consumer safety is controlled according to standards that are appropriate for each public or private sector, through the revision of the law containing regulations and standards that have to be in accordance with the new scenarios of protecting people's health and safety. State control entities are in charge of enforcing the regulation by supervising the application of good practices in Peruvian companies that manufacture and provide services, aiming to promote formality in them (Ley N° 29571, 2010). Therefore, the state interacts with different control and supervision authorities that are in charge of guaranteeing consumer wellbeing.

Micro and small enterprises (MSEs)

MSEs represent a vital source of work to ensure that Peru, over time, becomes a competitive country - as long as business formality is achieved. Businesses of these sizes are entrepreneurial organizations that can be managed individually or jointly by several partners who are registered with the Superintendencia Nacional de Aduanas y Administración Tributaria (SUNAT), where the company's fields of action are specified, so they are regulated and controlled to achieve formality in accordance with Ley N°28015 (Matute *et al.*, 2008). Thus, Peruvians, who are born entrepreneurs and

diversify into different sectors, must validate the registration of their company with SUNAT as an individual or corporation.

Relationship between quality assurance and competitiveness

A high-quality food item can only result from safe production, whose compliance is guaranteed by the Food Safety Act, which determines the obligation that consumer health is not to be affected, thus establishing a legal regime that regulates the manufacture of foodstuffs. A food safety act can only be applied by means of regulations that describe the procedures to guarantee the safety of food and not to harm any person by its consumption. Thus, the population ensures its right to well-being, to public health and, based on this, to the initiation of a higher-quality competitive environment (Decreto Legislativo N°1062, 2008). So, the practice of food production is carried out based on a regime of constitutional and legal food control to ensure that MSEs are made responsible for their industrialized products and thus achieve competitiveness for their growth as business organizations.

CONCLUSIONS

- In the MSE bakery and pastry sector, informality is high; therefore, a major challenge is the manufacturing under the implementation of sanitary standards in order to obtain PGH certification, which is essential for food manufacturing, followed by HACCP certification, which improves the quality of industrialized products.
- After obtaining these standardized certificates, which are mandatory for MSEs in Peru, it is suggested to voluntarily continue the ISO 9001:2015 certification, which allows the company to move towards internationalization.
- It is of utmost importance to recommend that these certifications be implemented gradually and without major requirements in their first phase, in order not to become a threat to MSEs, and thus promote the establishment of the basic structure of the company's quality assurance, since these certifications will be the pillars to achieve a competitive food industry.

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Competing interests

The author declares that there is no conflict of interest.

Authors' Contribution

Juan Carlos Bravo Aranibar (lead author): Conceptualization, research, supervision, writing (original draft, review and editing).